LMS Review Resource Selection Team Report
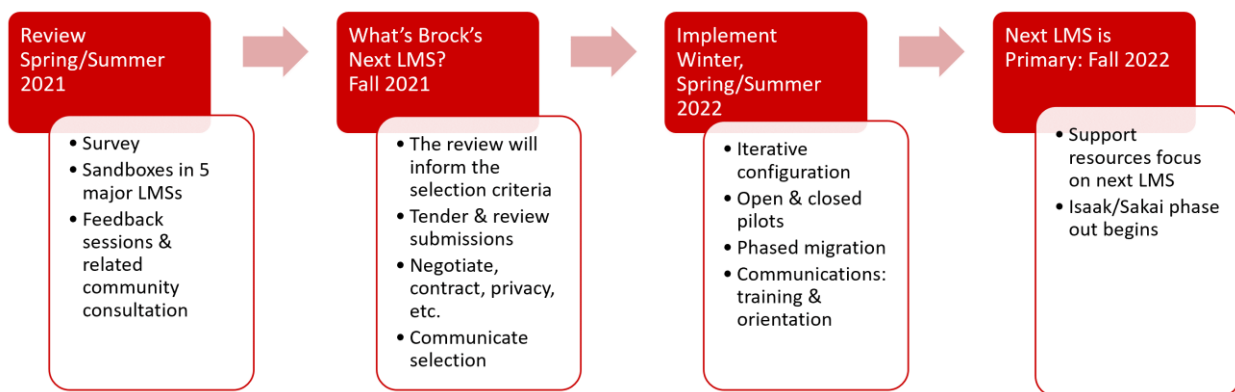
September 2021

Table of Contents

Summary

The Resource Selection Team, created by Senate on March 3, 2021, has consulted with the Brock University community, and compiled a list of specific priority and feature requirements of a modern LMS that Brock University's current Sakai-based LMS does not meet.

After extensive university-wide consultations it is the perspective of the Learning Management System Review Resource Selection Team that Brock University should conduct a competitive process to replace its current LMS.

More information about the consultation process, the current LMS state at Brock University, and future potentialities for a modernized LMS are detailed below.

Timeline

Review Spring/Summer 2021
- Survey
- Sandboxes in 5 major LMSs
- Feedback sessions & related community consultation

What's Brock's Next LMS? Fall 2021
- The review will inform the selection criteria
- Tender & review submissions
- Negotiate, contract, privacy, etc.
- Communicate selection

Implement Winter, Spring/Summer 2022
- Iterative configuration
- Open & closed pilots
- Phased migration
- Communications: training & orientation

Next LMS is Primary: Fall 2022
- Support resources focus on next LMS
- Isaak/Sakai phase out begins

Description of Consultation Activities

Consultations

During the review period, presentations were made to three faculty Chairs and Directors meetings and an Associate Deans meeting. Feedback was collected from each session.

In consultation with Senate Information & Technology Committee, a summary of the proposed review and a request for comment was circulated with all faculties and the library. The report, as well as written comments from faculty members and librarians, was circulated in the Senate minutes of March 3rd of 2021.

Report to Senate

The report to Senate, included in the March 3, 2021 agenda, outlines the consultation process and information to be gathered through the review process.

Campus Survey

During the month of June 2021, a cross-sectional survey was conducted to understand users' experiences with Sakai as well as to discover the importance of specific functionality and features within an LMS. The survey was sent out through several channels: emailed to the Deans to forward to their respective Faculty

members, Provost's newsletter, CPI newsletter, BUSU newsletter, university-wide Sharepoint site, homepage of Isaak-Sakai, Student Life and GSA social media channels, and presented in various Chairs and Directors meetings (Education, Math & Science). 531 responses were received.

The findings from this survey can be accessed online.

Sandbox Experience and Survey

From June 29, 2021 to August 5, 2021, the Brock University community was given the opportunity to explore leading learning management systems: Blackboard, Brightspace, Canvas, OpenLMS/Moodle, and Sakai 21. Participants were randomly assigned to an LMS sandbox, through a novel process we dubbed *Mission LMS*. Participants could access, explore, click, and create content to explore the features and functionalities for each of these systems over a five-week period. This provided the Brock University community an opportunity to experience LMSs that function differently than Brock's current LMS and submit feedback on the parts of that experience Brock University should look to emulate and what it should avoid. 759 individuals accessed the Mission LMS site and 367 responses were collected.

The findings from the Mission LMS experiences can be accessed online.

Resource Selection Team

The Resource Selection Team met virtually eleven times between April 11, 2021 and August 23, 2021. Team membership is listed in Appendix A.

Current Landscape at Brock University

The initial report to Senate described the growing use of Brock University's LMS and related technologies that augment LMS functionality, such as the Echo360 video platform and Crowdmark online marking platform. LMS growth has continued since that time, with average daily logins per user averaging 1.7 logins (8,901 unique daily users) in September 2019, rising to 1.9 in September of 2020 (19,809 unique daily users) and 2021 (17,982 unique daily users). Online testing has also risen well beyond expected usage levels. Monitoring and 5-day forecasting tools were created in the summer of 2020 to support capacity planning as intensity, complexity, and costs to operate the system continue to rise.

The initial March 2021 report to Senate organized Brock University's current LMS related challenges into technical, functional, integration and innovation issues which situated the need for a review. These are outlined below together with the associated findings from the review.

Technical Issues

Issues are occasionally found by students and instructors, often attributed to the shrinking development and testing community, e.g., recurring delayed E-Mail notification bugs, rubric bugs, odd quizzing behaviour. There are also challenges scaling the usage of the current LMS to new and ongoing online assessments for exceptionally large courses.

What we learnt

The need for system reliability was consistent in the feedback from the community survey and faculty Chairs and Directors meetings. Survey results identified instability or "glitches" as the fifth most common challenge. Transitioning to a provider that operates client tenants on a cloud infrastructure could improve Brock University's reliability by adding the resources of all

Canadian clients to those available to Brock as well as related operational supports. This also matches Brock University's board-approved "Cloud first" IT approach.

> *"Doesn't seem intuitive or user friendly for student grades - too much room for error (like how it doesn't calculate grades correctly if you don't put all zeros in first), and you can release all grades at once, but if a TA does that by accident (and they shouldn't have that ability), there is no way to do a mass unrelease."*

Functional Issues

Forums are unable to handle large class engagement, there is no document preview and markup, marking and grading functions are limited or inconsistent between tools which causes extra time and resources to manage appropriately (e.g., complex, and limited ability to assign TAs to mark assessments; cannot rescore quiz questions after delivery; yet to be released tests are not visible anywhere, not even as forewarning) and Sakai's requirement to refresh and reload pages does not match contemporary user expectations.

What we learnt

Survey responses noted functional constraints within the current LMS tools, mostly relating to the Tests and Quizzes, Assignments, and Gradebook tools, other tools were also mentioned as being restrictive. Inconsistencies in how permissions and roles are applied across tools create expectations in one area that are not met by another, leading to incidents that the instructional teams are forced to respond to. The Tests and Quizzes tool received many suggestions for improvement including more detailed assessment and activity statistics, more efficient ways to submit media (video and images), and more accessibility features.

Feedback across all components of the current LMS suggest a need to transition to a responsive and dynamic experience that provides good defaults for complex operations in contrast to the current reliance on full page-loads, scrolling, and a lack of systemic support for complex operations.

Integration Issues

SAKAI does not support latest integration specifications for application programming interface (API), including learning tools interoperability (LTI), publishers cannot integrate all their tools' features, and Microsoft chose not to create a Teams integration for Sakai.

What we learnt

Survey results identified the Echo360 video platform as the most important integration "that your course or course experience could not function without." The second most important was "I don't use any of these external tools" which could be associated with their lack of integration and discoverability. Course Readings, the Brock University Library's ARES system, was the third most used external tool. When alternatives were presented through the Mission LMS experience, including in Sakai 21, participants responded positively.

Innovation Issues

Lack of intuitive interface properly supported in an app/smartphone platform and all sites must share an undergraduate-focused course format.

What we learnt

The fourth most common challenge with the current LMS in the survey responses was "Outdated" and does not meet high expectations set by contemporary online experiences. Instructor responses suggested that the current LMS limited their pedagogical approaches because of lack of functionality or perceived complexity, and the inability to rely on user intuition exceeded the benefits. All consultations indicated the importance of a mobile experience and the integration of information such as calendars and notifications to smartphones.

Instructors also reported that incidental accommodations, such as extra time or a retakes for quizzes or assignments, were difficult to provide to students in response to the types of unpredictable, real-time events associated with teaching and learning during the pandemic.

Brock University has made minor contributions to Sakai, including a few interface items and accessibility improvements, but the institution is not able to contribute on a large-scale. The initial report to Senate noted that Sakai has lost long-term contributors, noting NYU has recently announced its migration to D2L Brightspace from Sakai, removing a significant source of innovation and development from the Sakai community. Subsequently, Notre Dame has announced that it will be transitioning from Sakai to Canvas.

Needs Identified from Consultations

A modern, straightforward, familiar interface

The most salient theme across all consultations is the need for an intuitive and user friendly LMS. The Brock community ranked easy and clear course content layout options (n=338), accessibility (n=284), and modern easy-to-use interface (n=253), as the most important features of an LMS. After experiencing a variety of other systems, the Brock faculty, staff, and students reiterated that the most-liked features are ease of use or navigation (specific to creating and building a course), the aesthetics of the system (desirable layout), and intuitiveness. Although one of the reported priorities for an LMS is to provide familiarity in experience (76%), a few of the primary reasons for dissatisfaction (22.7%) with the current Sakai system are a lack of intuitive or user-friendliness (n=116), outdated interface (n=52), and a confusing layout (n=27).

> *"make a user friendly app that people can log in on from their phones and not have to log in every time they wanna check their homework, as it makes the process of completing schoolwork that much more annoying."*

Ease of content creation

The Brock community desires intuitive and effortless content creation and navigation through prioritizing processes such as: automating tasks (61%), simplicity in completing tasks (59%), and allowing for content and options of their choosing (55%). In terms of site and content creation, a few of the top ranked features by faculty, staff, and students are ease of organization of content (drag and drop) (n=249), ability to navigate between multiple tabs and windows of the same course (n=188), contemporary text editor (n=57), flexible group creation and management (n=31), and options for multiple modes of content delivery (n=15).

"Through the activity stream, you were able to see all tasks for all your courses. Then, you were able to click on each individual task and information would pop up regarding the grades or the assignment. This sort of information is not as easily accessed on Sakai."

Integrated and interactive dashboard

The most sought-after feature that other LMSs have and Brock University's current LMS does not offer, is one integrated location that allows users to track content and progress across all sites. Although it varied in form and function across all LMSs, this feature is a consistent highlight for faculty, staff, and students. The ability to see a snapshot of each course in one place, identify deadlines and outstanding assessments, and view an integrated calendar and checklist, allows students and instructors to stay organized and focus their attention on top priorities.

"It needs to have sensible names for things, and intuitive processes. I spent a ton of time this year trying to figure out how to do things that should be simple, like creating a question pool for quizzes, or sorting out gradebook."

Seamless integration of multimedia
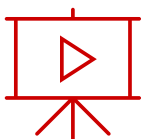
We know that video and audio content is a crucial aspect of online teaching and learning. At Brock, the most important external tool in our current LMS is the Echo360 video tool, 34% of respondents indicated that their course/course experience could not function without it. The ease of upload of multimedia content (videos, images) into the LMS is the most important feature (n=263) when it comes to site and content creation for faculty, staff, and students. More specific features such as simple submission of video and audio content for assessments, and providing video and audio recorded feedback to students were mentioned as desirable aspects.

Robust grading and feedback tools

Three of the top five built-in tools that the Brock community suggested their course experience could not function without are Assignments (n=359), Gradebook (n=337), and Tests and Quizzes (n=253). This high usage and the importance of these tools supports the notion that a robust grading and feedback feature is foundational to the LMS. When looking at assessment and communication a few of the most important features ranked by faculty, staff, and students are ease of grading/annotation (n=275), straightforward assessment creation/submission (n=156), and submission receipts for assessments (n=48). Although the ability to grade student submissions within the web browser was a welcomed addition to Sakai 21, faculty found that there were more options around assessments and grading in the other LMSs. This includes annotation, bulk editing, import/export of grades, event log in gradebook, grader notifications and specific file type submissions.

Complementary mobile experience

One of the most significant challenges with our current Sakai-based LMS is its lack of a platform-specific mobile app. Despite this limitation, the Brock community continues to access Sakai through their mobile devices (23.5% of our LMS usage is accessed via mobile browsers), which supports the data that users want the LMS to be easy to use and stable, including having a mobile application (n=86). The sandbox experiences represented limited use of the provided LMS' mobile apps but for the few users that found their way to these applications their responses were positive.

Ease of content migration

When considering a change in the LMS one of the most important considerations that faculty, staff, and students have noted is the need for an easy import/export of content between sites, other LMSs, and related technologies (n=151). Users of our current Sakai system appreciate the easy transfer of content from site-to-site (n=23) and want to ensure that functionality is sustained in the future LMS. There have been significant developments in automated LMS migration services in recent years, as noted by Mohawk College's migration of 20,000 courses in 10 days. The short-term success of a new LMS will be primarily judged by the migration experience.

Acquisition Recommendation

Brock University should conduct a competitive process to replace its current LMS. This process should be open to qualified vendors representing products explored during the sandbox, or not, and vendors committed to implementing and supporting open sources LMSs, including Sakai.

Brock University's current LMS and all of the alternatives explored have a claim to be part of the Next Generation Digital Learning Environment (NGDLE), a concept first written about in 2015 by Educause's Malcom Brown that has been further explored since. Brock University should use the information gathered to find areas that distinguish the available options from each other, reflect the needs identified by the Brock University community, and complement other components of the Brock University student experience.

The selection criteria should be based on the recommendations in this report and all of Brock University's existing privacy, security and accessibility policies. Functional requirements should be evaluated separately from vendors' financial submissions.

Appendix A

Resource Selection Team membership

Chair	Dr. Madelyn Law	Associate Vice-Provost, Teaching & Learning
Project Manager	Matt Clare	Associate Director, Technology-Enabled Learning, Centre for Pedagogical Innovation
Members	Mike Brousseau	Manager, Educational Technologies, Centre for Pedagogical Innovation
	Dr. Alex Christie	Assistant Professor with the Centre for Digital Humanities
	David Cullum	Associate Vice-President, Information Technology Services
	Ben Johnson	Undergraduate student representative (as appointed by BUSU)
	Alba Kotyk	Application Architect, Information Technology Services
	Amanda Macdonald	Graduate student representative (as appointed by the GSA)
	Maggie Whitfield	Staff representative
	Dr. Dawn Zinga	Associate Dean representative